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Prevalence of Type A Behavior Among Undergraduate Students With Medical and Nonmedical Career Plans

Edward W. McCranie, Ph.D., and Gwendolyn L. Lewis, Ph.D.

The Type A behavior pattern, characterized by such traits as competitiveness, intense striving for achievement, overcommitment to job or vocation, impatience, and easily aroused hostility, has become widely known in recent years as a significant risk factor for coronary heart disease (1). As a consequence of the stresses and demands of medical training and practice, a number of writers have asserted that physicians are particularly prone to Type A behavior (2, 3). Since the Type A pattern includes personal qualities incompatible with the effective practice of medicine and potentially harmful to physicians' own health and well-being, it is important to assess the validity of this belief.

Some observers (4) believe that Type A behavior is instilled and/or reinforced during the undergraduate years as a result of the competitive pressures associated with getting into medical school. Indeed, the characteristics of the Type A pattern appear similar to those associated with the widely discussed but little documented "premedical syndrome" (5, 6). The purpose of the present study was to assess the prevalence of self-reported Type A behavior among premedical students and students pursuing other degree and career objectives. Because of the increase in the numbers of women entering medical school, a second purpose was to compare the prevalence of Type A behavior by gender and premedical status.

The study reported here was supported in part by grant no. 1398 from the Josiah Macy, Jr. Foundation.

Dr. McCranie is assistant professor of sociology, Department of Psychiatry and Health Behavior, Medical College of Georgia, Augusta; and Dr. Lewis is senior policy analyst, College Board, Washington, D.C., and formerly was director of the Premedical Education Project, Associated Colleges of the Midwest, Chicago, Illinois.

Methods

Data for this study were collected as part of a larger, longitudinal research project investigating career plans and values among students from the 13 private liberal arts colleges in the Associated Colleges of the Midwest. A random sample of 2,534 students in the class of 1983 were mailed a survey questionnaire in the fall of 1981 (their junior year). Of these, 47.9 percent responded. These 1,184 respondents were divided into three groups: (*a*) those considered premedical students ($n = 150$) according to their stated degree and career goals; (*b*) those fulfilling all the premedical course requirements but not planning medical careers, almost all of whom were biology and chemistry majors ($n = 218$); and (*c*) all other students ($n = 816$). In the early winter of 1983 (that is, in the final months before their graduation) all the survey participants still enrolled were resurveyed. All the students previously classified as premedical ($n = 147$) and simple random samples of the students from the other two groups (95 biology and chemistry majors, 94 others) were sent the student version of the Jenkins Activity Survey (7) and a follow-up questionnaire about their degree and/or career plans. This disproportional sampling procedure was used to ensure an adequate sample of students in each group.

The student version of the Jenkins Activity Survey (JAS), a self-report measure of Type A behavior adapted from the adult version of the JAS, contains 44 items, 21 of which contribute to an overall Type A score (7). Type A responses to the 21 items are scored 1, and Type B (that is, non-Type A) responses are scored 0, with summed scores thus ranging from 0 to 21. The student JAS scale has been found to exhibit adequate internal consistency and test-retest reliability (8) and to predict significantly

a variety of Type A behaviors, including striving for achievement, hostility, and sense of time urgency (7).

Results

Of the 336 students sent the JAS, 253 returned it, for a response rate of 75.3 percent. The respondents consisted of 118 premedical students, 73 biology or chemistry students, and 62 other students as classified by degree and/or career plans in 1981.

An examination of responses to the 1983 follow-up questionnaire revealed that a number of the students changed their degree and/or career plans from their junior to senior years. Reclassifying these students according to their highest degree plans in 1983 resulted in a total of 89 who planned careers in medicine, 63 who planned to pursue a nonmedical doctoral degree (that is, a Ph.D.-level degree in any field other than medicine), 44 who planned to obtain a master's degree, and 57 who planned to obtain a bachelor's degree only.

A two-way analysis of variance (ANOVA) was conducted to examine potential differences in JAS scores of the students by sex and career or degree group. The ANOVA yielded significant main effects for both sex ($F[4,248] = 7.94$, $p = .005$) and degree group ($F = 6.00$, $p = .001$). There was no significant sex-by-degree group interaction. As shown in Table 1, the women scored higher than the men on the JAS scale; that is, they reported more Type A behavior than the men. A post-hoc comparison (Duncan's multiple-range test) of the four degree groups also indicated that the scores for Type A behavior in the medical and nonmedical doctoral groups were similar and significantly higher than the scores in the groups planning to achieve a master's or bachelor's degree.

Discussion

These results suggest that the premedical students were no more likely to exhibit Type A behavior than the students who planned to achieve doctoral-level training in nonmedical fields. This conclusion is consistent with other research (7) that found positive associations between Type A behavior and higher educational or occupational aspirations and attainments in general.

The observed gender difference in the present study is consistent with one other study (9), which found that women undergraduates at the University of Pennsylvania, nearly half of whom planned to attain advanced degrees, changed over the course of a semester toward significantly higher JAS scores than male undergraduates. The findings of that study and the present study raise the question of whether the environments of selective undergraduate colleges influence the development of greater

TABLE 1

Mean Scores of Type A Behavior of 253 Seniors, by Gender, with Each of Four Degree Plans at 13 Undergraduate Colleges, 1983*

Groups	Males			Females		
	No.	Mean Score	S.D.	No.	Mean Score	S.D.
Medical degree	54	8.4	3.3	35	10.1	3.9
Nonmedical doctoral degree	31	8.8	3.3	32	9.4	2.5
Master's degree	23	7.0	3.2	21	8.6	4.4
Bachelor's degree	24	6.8	2.3	33	7.5	3.4
Total	132	8.0	3.2	121	9.0	3.7

* The 13 schools were private, liberal arts colleges in the Associated Colleges of the Midwest. The students completed the Jenkins Activity Survey, which is described in the text; scores for Type A behavior range from 0 (no such behavior) to 21 (highest amount of such behavior).

Type A behavior among women or whether such institutions differentially select women with greater Type A tendencies.

In addition to replicating the present study in other undergraduate samples, systematic research should assess the prevalence, etiology, and health-related correlates of Type A behavior among medical students, residents, and physicians, and should examine the effects of such behavior on the quality of medical care. With increasing numbers of women pursuing medical careers, the present findings also suggest the need for further investigation of possible gender differences in the prevalence and correlates of Type A behavior among medical trainees and physicians.

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A Survey of Journal Clubs in U.S. Family Practice Residencies

Robert M. Heiligman, M.D., and Alison Okada Wollitzer, Ph.D.

Bowers (1) suggested 35 years ago that the journal club "should be a part of the educational program at every hospital even if no interns or residents are assigned." In 1981 Geyman (2) recommended the "active use of journal clubs in Family Practice residencies, stressing the development of critical reading habits and the effective use of literature in patient care." Yet, only a single, indirect report of a family practice journal club exists (3).

Dr. Heiligman is associate clinical professor, Department of Family and Community Medicine, University of California, San Francisco, School of Medicine, and Dr. Wollitzer is research coordinator, Santa Barbara Cottage Hospital, and program coordinator, Santa Barbara Medical Foundation Clinic, California.

The present authors conducted a survey of journal clubs in family practice (FP) residencies to identify the prevalence, mode of organization, content, and success of the clubs as appraised by residency program directors. Other objectives were to identify the factors associated with successful clubs and the clubs' educational goals and nonacademic functions.

Methods

The sample studied consisted of all 388 family practice residencies in the United States. A questionnaire was mailed in February 1986, and a second mailing to nonresponding programs followed one month later. Demo-

Attendance by community physicians was significantly correlated with the respondents' ratings of satisfaction with the clubs in the present study. However, the respondents did not seem consciously aware of this relationship, as judged by their low opinion of the importance of community physicians' involvement. In fact, less than one in seven of the clubs offered continuing medical education credit.

Conclusion

Any residency program planning to start a journal club must determine what constitutes the proper balance among socialization, practicality, and scholarship. The most successful clubs allow for the contributions of a heterogeneous group of participants. Having interested faculty and community physicians as role models for the residents seems particularly important. Journal club functioning may also be enhanced by designating a leader and setting standards of attendance. These educational sessions are highly adaptable and can operate successfully in a wide variety of residency settings. The journal club remains an important tool in graduate medical education.

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Attitudes of Faculty Members, Residents, Students, And Community Physicians Toward Health Promotion

Mary M. Horowitz, M.D., James C. Byrd, M.D., and Harvey W. Gruchow, Ph.D.

A growing body of evidence links personal behaviors to many chronic diseases and increased mortality (1, 2). The 1979 U.S. surgeon general's report (3) identified the following behavioral changes as desirable to promote health in the American population: elimination of smoking; decreased consumption of alcohol, excess calories, saturated fat, cholesterol, salt, and sugar; increased exercise; periodic health screening; and regular use of seatbelts.

Physicians, through delivery of routine medical care, have an opportunity to influence the personal health habits of their patients. Several studies (4–6) have demonstrated, how-

Dr. Horowitz is assistant professor of medicine, Medical College of Wisconsin, and director of primary care clinics, Milwaukee County Medical Complex; Dr. Byrd is assistant professor of medicine at the college and associate chief of staff, Ambulatory Care, Clement J. Zablocki Veterans Administration Medical Center; and Dr. Gruchow is associate professor of medicine in the Division of Biostatistics and Clinical Epidemiology at the college; all are in Milwaukee.

ever, that while community physicians consider it important for patients to modify their behavior, they do not spend much time counseling them to do so. Medical education places little emphasis on health counseling. Physicians leave their residencies feeling undertrained in patient management and unprepared to counsel patients regarding behaviors that affect their health (7, 8). The emphasis in academic health centers on inpatient care, complex illnesses, and "high tech" medicine may fail to convey to trainees the importance of personal behaviors for the health of the average person.

If society expects physicians to intervene more to modify their patients' behavior and thereby promote health, it must ensure that they are trained to do so. Such training requires medical school faculty members who believe that changing patients' behavior is desirable and who are themselves skilled in counseling. The purpose of the study reported here was to determine the attitudes toward health promotion of a group of academic physicians involved in teaching residents and students and to determine whether these attitudes differed significantly from those reported by medical students, residents, and community physicians.

Methods

In 1985 a questionnaire modified from that used by Wechsler and colleagues (4) was distributed to all full-time faculty members in the Department of Medicine and all freshman medical students at the Medical College of Wisconsin and to all internal medicine residents in the Medical College of Wisconsin Affiliated Hospitals. Eighty-nine (84 percent) of the 106 faculty members, 91 (97 percent) of the 94 residents, and 194 (96 percent) of the 202 students returned completed questionnaires.

The questionnaire asked the respondents whether they felt is was worthwhile to attempt to modify patients' behavior to minimize risk factors; to rate each of 22 specific behaviors for their importance in promoting the health of the average person; to describe how prepared they felt to counsel patients regarding smoking, alcohol use, diet, exercise, and stress. Responses were given on a 4-point Likert-type scale ranging from 1 = definitely to 4 = definitely not, from 1 = very important to 4 = very unimportant, and 1 = very prepared to 4 = very unprepared, respectively. Scores for community physicians were derived from reports published by Wechsler and colleagues (4) of physicians in Massachusetts and Sobal and colleagues (5) of physicians in Maryland.

The mean scores for each group of respondents were compared using the Mann-Whitney test, which does not require the assumption of a normal distribution of responses. The mean scores for feeling prepared to counsel patients were tested for a linear trend with increasing level of training.

Results

The average age of the respondents was: students, 24.3 (S.D. = 3.5); residents, 28.2 (S.D. = 2.7); faculty members, 42.9 (S.D. = 10) years. Sixty-four percent of the students, 81 percent of the residents and 89 percent of the faculty members who responded were male. The median year of graduation from medical school for faculty members was 1971.

Most respondents (98 percent) felt that it was definitely (73 percent) or probably (25 percent) worthwhile to modify patients' behavior in order to minimize risk factors. Table 1 lists the mean scores given the 22 behaviors by each group of respondents and the mean scores from the two previous surveys of community physicians. Most in each group felt that it was very important to eliminate cigarette smoking. There was little agreement regarding other items, however.

The students attributed significantly more importance than did the faculty members to 10 of the 22 behaviors and less importance only to use of seat belts. The residents were more similar to faculty members than to the students in that they attributed significantly more importance than the faculty members to only five behaviors and less to only one. Of the community physicians, the Massachusetts physicians attributed significantly more importance than did faculty members to 11 behaviors, and the Maryland physicians attrib-

TABLE 1

Mean Scores of the Importance of 22 Behaviors in Affecting Patients' Health as Rated by Internal Medicine Faculty Members and First-Year Students at the Medical College of Wisconsin and Internal Medicine Residents Affiliated with the College and by Community Physicians in Massachusetts and Maryland, 1985*

Behaviors	Faculty Members ($n = 86$)	Residents ($n = 91$)	Students ($n = 194$)	Massachusetts Physicians† ($n = 433$)	Maryland Physicians‡ ($n = 1487$)
Eliminate cigarette smoking	1.04	1.02	1.09	1.08	1.03
Always wear seat belts	1.35	1.35	1.72††	1.54	1.25
Wear protective equipment/clothing around harmful substances	1.43	1.48	1.45	§	1.11**
Eliminate cigar smoking	1.61	1.77	1.56	1.98††	1.65
Avoid excess caloric intake	1.71	1.51	1.85	1.32**	1.18**
Know drug contents and side effects	1.73	1.81	1.66	1.56**	1.35**
Drink alcohol moderately	1.77	1.67	1.90	1.70	1.47
Eat balanced diet	1.84	1.70	1.63**	1.49**	1.24**
Eliminate pipe smoking	1.87	1.95	1.67**	2.04	1.72
Avoid high-cholesterol foods	1.92	1.77	1.76**	1.95	1.70**
Avoid unnecessary X rays	1.99	2.20††	1.63**	§	1.45**
Avoid saturated fats	1.96	1.94	1.86	1.75**	1.47**
Minimize salt intake	2.08	1.85**	2.07	1.72**	1.68**
Avoid undue stress	2.14	2.04	1.81**	1.86**	1.66**
Exercise three times a week	2.20	1.87**	1.98**	2.05	2.02
Limit caffeine intake	2.40	2.35	2.28	2.20**	2.01**
Get seven hours sleep a night	2.56	2.48	2.39	§	1.94**
Eat breakfast daily	2.58	2.48	2.48	2.16**	1.93**
Minimize sugar intake	2.65	2.41**	2.33**	2.20**	2.24**
Practice relaxation methods	2.73	2.46**	2.23**	2.45**	2.15**
Have an annual physical examination	2.81	2.25	1.95**	2.36**	2.02**
Take vitamins	3.34	3.07**	2.70**	3.37	3.10**

* Respondents rated the importance on a scale of 1 = very important, 2 = important, 3 = unimportant, and 4 = very unimportant.

† Scores reported by Wechsler and colleagues (4).

‡ Scores reported by Sobal and colleagues (5).

§ Item not included in questionnaire.

** Rated as significantly more important than rated by faculty members (Mann-Whitney, $p < .05$).

†† Rated as significantly less important than rated by faculty members (Mann-Whitney, $p < .05$).

uted more importance to 16 behaviors. The behaviors felt to be more important by community rather than faculty physicians included avoiding excess calories, eating a balanced diet, avoiding saturated fats, and minimizing salt intake.

Of the three groups of respondents surveyed at the college, the students were least likely, the residents more likely, and the faculty members most likely to feel prepared to counsel patients regarding smoking, alcohol, diet, and exercise (p for linear trend $< .01$). The faculty members were no more likely than the trainees to feel prepared to counsel about stress. The percentages of faculty members who felt very prepared to counsel patients were 43 percent for smoking, 34 percent for alcohol, 24 percent for exercise, 22 percent for diet, and 13 percent for stress. The mean scores indicated that the faculty members felt significantly less prepared than the Massachusetts community physicians to counsel patients regarding smoking (1.62 versus 1.45, respectively; $p < .02$), alcohol (1.74 versus 1.56, respectively; $p < .02$), diet (2.05 versus 1.71, respectively; $p < .001$), exercise (1.93 versus

1.67, respectively; $p < .001$), and stress (2.45 versus 1.85, respectively; $p < .0001$).

Discussion

It appears from the data presented here that academic physicians were less likely than the community physicians to attribute importance to many of the behavioral changes advocated by the surgeon general. Moreover, increasing level of training was associated with a decrease in the importance attributed to promotion of healthful behaviors. Although the value of some of the behaviors listed is debated, the faculty members attributed less importance than the trainees or community physicians to a number of healthful habits, such as regular exercise and avoiding saturated fat, that have substantial support in the medical literature. The less favorable attitude of both faculty and house staff members may be due to the type of patients cared for in academic medical centers, which serve a disproportionate number of patients with advanced and complicated health problems. Measures that have as their primary aim prevention of disease may assume less importance in this setting. In addition, most teaching takes place on inpatient wards where diagnostic and therapeutic interventions routinely take precedence over patient education, especially where early discharge is encouraged. In the authors' opinion, disturbingly few of the faculty members felt very prepared to counsel patients. If teaching faculty members neither feel that health promotion is important nor feel prepared to counsel their patients regarding lifestyle changes, it will continue to be difficult for students and residents to become competent health counselors.

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